

Title (en)
Telescopic piston for pump

Title (de)
Teleskopischer Kolben für eine Pumpe

Title (fr)
Piston télescopique pour pompe

Publication
EP 2446971 A1 20120502 (EN)

Application
EP 11187254 A 20111031

Priority
CA 2719635 A 20101101

Abstract (en)
A piston pump (10) dispenser in which a volume in a compartment (18) defined inside a piston chamber-forming member (12) and between axially spaced discs (48,50) on a piston (16) varies with movement of the piston (16) in a cycle of operation due to the piston (16) having a portion (45) between the discs (48,50) which varies in length.

IPC 8 full level
A47K 5/12 (2006.01); **B05B 11/00** (2006.01)

CPC (source: EP US)
B05B 11/007 (2013.01 - EP US); **B05B 11/1001** (2023.01 - EP US); **B05B 11/1097** (2023.01 - EP US)

Citation (applicant)
• US 5165577 A 19921124 - OPHARDT HEINER [CA]
• US 5282552 A 19940201 - OPHARDT HEINER [CA]
• US 5676277 A 19971014 - OPHARDT HEINER [CA]
• US 5975360 A 19991102 - OPHARDT HEINER [CA]
• US 7267251 B2 20070911 - OPHARDT HEINER [CA]
• US 6557736 B1 20030506 - OPHARDT HEINER [CA]

Citation (search report)
• [XD] US 6557736 B1 20030506 - OPHARDT HEINER [CA]
• [XP] EP 2275014 A2 20110119 - GOTOHTI COM INC [CA]
• [A] EP 2000219 A1 20081210 - GOTOHTI COM INC [CA]

Cited by
EP2676736A1; EP2676737A1; US11051660B2; WO2014090570A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 2446971 A1 20120502; EP 2446971 B1 20140430; CA 2719635 A1 20120501; CA 2719635 C 20171031; CN 102536789 A 20120704; CN 102536789 B 20160629; US 2012104051 A1 20120503; US 8528792 B2 20130910

DOCDB simple family (application)
EP 11187254 A 20111031; CA 2719635 A 20101101; CN 201110336721 A 20111031; US 201113284222 A 20111028